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The medical record system in acute situations at Okhaldhunga Community Hospital

A field-study from a hospital in rural Nepal

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Contents

List of abbreviations:

WHO: World Health Organization

UN: United Nations

GNI: gross national income

OCH: Okhaldhunga Community Hospital

MR: medical record

CMA: Community Medical Assistant

MAF: Medical Assistant Fund

Abstract

Background

Okhaldhunga community hospital lies in rural Nepal, and is a hospital with simple equipment and facilities. The supply of power is little, therefore it does not excist any electronical medical record system. Each patient has its own notebook, which serves as their medical record, and each patient is responsible for this medical record. That means that they bring their medical record back home when they are discharged from the hospital, and the hospital has no archive. Two other norwegian medical students had been to OCH in January 2011 to write an assigmnet about how the medical record system at this hospital worked in general. Now the norwegian doctor, who is the medical coordinator at OCH, gave us the opportunity to write about how the medical record system works in acute situations.

Method

As the two students in the former study, we chose to use a quantitative and a qualitative design on our study. For the quantitative design we developed a questionnaire concerning the medical record system. For this we used the questionnaire from the former study as a template, and Dr. Bøhler who works at OCH guided us. For approximately two months (december 2012 and january 2013) we hired a staff at the hospital who filled in the questionnaire based on information from patients admitted to hospital after office hour.

Our qualitative study had a different perspective than the former study. Instead of making a study from the patient's view, we wanted to see how the doctors experienced the system. There were 4 doctors working at the hospital at the moment we visited Okhaldhunga - Dr. Bøhler was one of them, and the 3 others were young Nepali doctors working at the hospital as a part of their residency to become a general practitioner. We did a semi-structured interview on all four of them, which we only used as a support to our quantitative part of the study.

Main results

In our quantitative part we had 163 questionnaires that were relevant to use in our study. Nevertheless it was large enough to determine that the compliance in bringing the book is different in acute situations compared to during office time. We found that 63% (102/163) brought the medical record, while the former study found a compliance of 1834/2045. We found that pregnant women had a great compliance in bringing the book. Short time since last

visit also stands out as a link between patients with compliance. As the motivation for bringing the medical record, we found that the main reason (63/102) was because they knew that the medical record had relevant content. Concerning the other group, the ones that did not bring the medical record, the main reason for that was because of urgency in the acute situation (25/61). 18/61 did not bring the medical record because they had lost it,and 15/61 because they had forgotten it.

Conclusion

It seems that the MR system at OCH is a feasible solution with the facilities and resources they have at disposal. Still there is not good enough power-supply or resources for choosing an electronically medical record system. The aim will be to continue to improve the current system and continue to state the importance of bringing the MR to the patients.

Introduction

Background of the study

In 2012 we heard about Dr. Erik Bøhler and OCH in rural Nepal. We wanted to exchange during our education, to get a global experience of the medical care. We contacted Dr. Bøhler and he told us about the many medical students who had written assignment during their stay in the hospital. We got in touch with Professor Gunnar Bjune who had been supervisor for medical assignments earlier. Professor Bjune and Dr. Bøhler had just guided two students, Åge Aleksander Skretting and Daniel Stenberg Saxe, with a project concerning the medical record system at OCH. They wanted us to continue this work. We designed a study (see *aim of the study*) and prepared the field work. In January 2013 we went, together with our friend Randi Hauge Tengesdal, all the way down to Okhaldhunga to collect data. This journey was a tough meeting with another world, and an experience for lifetime.

Nepal – some general facts

Figure 1: Map of Nepal [1] – Okhaldhunga disctrict in the east

Nepal is a country in Asia, located between India in the south and China in the north. Total area of Nepal is 147 181 square km, under half the size of Norway. It is located in the Himalayas and the landscape is mostly mountains, which is challenging for a functional infrastructure. According to the UN, Nepal is one of the less developed countries in the world.

[1] Nepal (18/9-14): http://www.infoplease.com/atlas/country/nepal.html

Nepal has eight of the ten tallest mountains in the world, including Mount Everest as the tallest of all. Nepal is divided in five development regions, which is subdivided in 14 adminsitrative zones and 75 districts [2]. Okhaldhunga is a district in Sagarmatha zone in the Eastern region. Okhaldhunga district is one of the 75 districts of Nepal, with Okhaldhunga as its headquarter. The district covers an area of 1,074.5 km². Okhaldhunga district had a population of 147,984 in 2011, with a population density of 140/km^2 [3].

The population is quite large with nearly 27,5 million inhabitants[4], corresponding to the 41st most populous country. Only 17 % of the population lives in cities, but the density is high[1], about 209 people per km2 (something quite different from Norway with 16 /km2). The hig population density is mostly concentrated in the big cities; Kathmandu, Biratnagar, Pokhara and Patan. Kathmandhu is the capital.

Nepal is one of the poorest countries in the world, where about half of the population lives below the poverty line, meaning living on less than $ 1.25 a day[5].

The GNI per capita in Nepal was $ 700 in 2012 ($ 700 = 4333 NOK), compared to Norway where GNI per capita was $ 98 780 ($ 98780 = 611 433 NOK).

Argiculture is the main industry, about three quarters are farmers. They grow rice, maize, millet, sugar cane, wheat, potatoes, legumes, barley and tobacco[6]. Much of the production is dependent on irrigation. The climate can be very dry. Especially before the summer monsoon, which means the rainy season. It lasts from about May to September.

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[2] List of districts of Nepal - Wikipedia (10/9-14) :
http://en.wikipedia.org/wiki/List_of_districts_of_Nepal

[3] Okhaldhunga District – Wikipedia (3/9-14):
http://en.wikipedia.org/wiki/Okhaldhunga_District

[4] Nepal statistics – Unicef (10/9-14):
http://www.unicef.org/infobycountry/nepal_nepal_statistics.html#77

[5] Hva er fattigdom – FN (10/9-14):
http://www.fn.no/Tema/Fattigdom/Hva-er-fattigdom

[6] Økonomi og næringsliv i Nepal – Store norske leksikon (10/9-14):
https://snl.no/Økonomi_og_næringsliv_i_Nepal

Most Nepali people are either Buddhists or Hindus, and they are placed in an outdated hierarchy based on different castes. Officially this system does not exist, but still it influence the social community and it is expected to marry a person from the same caste. The higher castes are most educated and they are minority. The rate of illiteracy is still high, and only 57% of adults are literate[2].

The life expectancy at birth was in 2012 68 years. Most diseases occur more frequently in Nepal than in other South Asian countries. Leading diseases are diarrhea, gastrointestinal disorders, intestinal parasites, leprosy, leishmaniasis, goiter and tuberculosis. The prevalence of HIV was in 2012 0.3%[2]. The mortality rate during childbirth is decreasing, from 850 in 100 000 mothers in 1990 to 280 in 2011[7].

Okhaldhunga community hospital

Figure 2: Okhaldhunga Community Hospital - january 2013

OCH was established in 1962 by Dr. James Dick. It started out as a small clinic, but today it serves as the only hospital in the Okhaldhunga district. Additionally, it serves as the hospital for the population in four surrounding districts which means that it accounts for a popultaion

[7] Health in Nepal – Wikipedia (10/9-14): http://en.wikipedia.org/wiki/Health_in_Nepal

more than 250.000[8]. The hospital, which serves as an acute care general hospital, has 45 inpatient beds, an outpatient clinic and a Mothers Waiting home for women who travel from distant areas to be near the hospital before their delivery[9]. There are presently 59 Nepali staff at the hospital, and also two Norwegians; our supervisor Dr. Erik Bøhler who is the medical coordinator and his wife Kristin Bøhler who works at the social office. Besides Dr.Bøhler there are always 1-4 Nepali doctors who work at Okhaldhunga Community Hospital as a part of their residency for becoming general practitioner. They work at the hospital for 6 months each. As an addition to the doctors there are approximately 5 Community Medical Assistens (CMAs) working in the Outpatient Clinic. Even though they only have 18 months of medical education, they do 80-90 per cent of all the treatment and refer the rest to the doctors working in the hospital[10].

Most of the economy of the hospital is based upon the patient's own payment when staying at the hospital. How much each patient has to pay depends on which treatment and procedure they are given. Besides the payment from the patients, the hospital gets economical support from different missionary organizations from different countries and from the government of Nepal. The latter only cover about 1 per cent of the costs of the hospital. The hospital also runs a Medical Assistant Fund (MAF) which is built of support from different organizations. This fund is used to give necessary treatment to the poorest people who otherwise would have gone untreated with a life-threatening disease. To get support from the MAF, the patient has to apply for it at the social office, and they are given an amount based on some criteria and rules for support. Patients with weight below 12 kg are treated for free at the hospital, and this is also covered by the MAF. Pregnant women are also treated for free. This is partly covered by the Nepali government and partly by foreign donors[9].

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[8] Okhaldhunga – Tansen Hospital (3/9-14):
http://www.tansenhospital.org.np/okhal.html

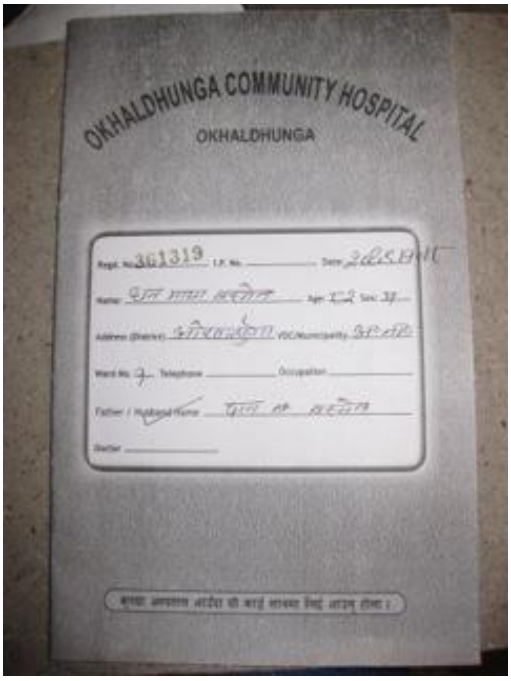
[9] Okhaldhunga Hospital – United Mission to Nepal (3/9-14):
http://www.umn.org.np/new/okhaldhunga_hospital.php

[10] Bøhler, E. Utkantsmedisin i Nepal. Tidsskr Nor Legeforen 2010; 130:2506 – 8

Figure 3: The doctors looking at an X-ray

Figure 4: The doctors in action

Medical record system at Okhaldhunga Community Hospital



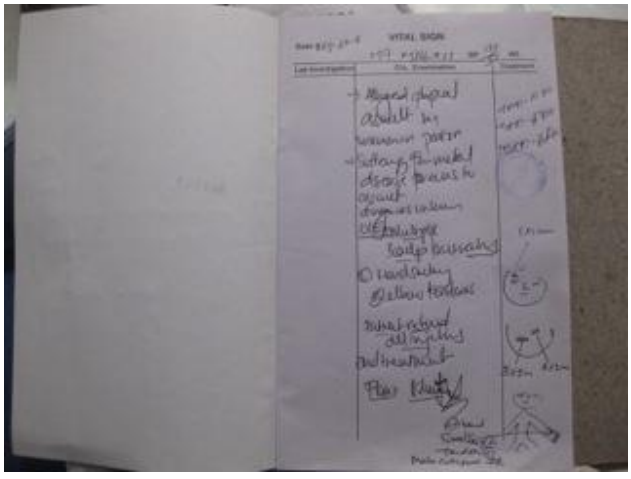


Figure 5: The medical record system at OCH consists of small booklets

At OCH, the medical records of each patient consist of a small booklet which is not stored in the hospital. The patients themselves are responsible for keeping it, and bring it when they visit the hospital. Patients get their personal MR at their first visit to the hospital. As patients pay for their stay in the hospital, the stay is a little more expensive if they forget their medical record. This system has existed since 2002, before that they used to keep the medical record at the hospital. But keeping the medical records at the hospital had one special problem - to find the patients' MR in the archive, they needed to have a way to identify the patient. A personal ID, date of birth or another characteristic, but this was difficult because many people in Nepal do not have characteristics like these[11]. They found one solution, and that was to give each patient a unique number established at the hospital which they had to bring each time they visited the hospital. The number they got was also written on the MR, and so they had an identification number which made an opportunity to store the MRs at the hospital and easily find the correct MR as patients returned. One staff worked in the archive. It seemed as a good way of solving the problem, but the hospital needed a staff all the time to work in the archive. This demanded a big resource. Therefore, in 2002, a Dutch doctor working at the hospital changed the whole system - the same that exists today - a medical record system where the patient is responsible for his/her own medical record, and hence bring it home and to the hospital for each visit. It does not excist any copy of the medical record at the hospital, meaning that if the patients forget their booklet, no written information about the patient is available for the staff.

The information in the MR is handwritten. CMAs write after a consultation in the Outpatient Clinic, and the doctors write when patients are admitted to the hospital. They do not write daily notes, but a small summary note when the patients are discharged.

WHO has made a guide for medical records in developing countries, which states that the main reason for a medical record is «to record the facts about a patient's health with emphasis on events affecting the patient during the current admission or attendance at the health care

[11] Stenberg Saxe D. , Skretting Å. The medical record system at Okhaldhunga Community Hospital in rural Nepal. (2011)

facility, and for the continuing care of the patient when they require health care in the future.» [10] WHO has also defined some main functions of having a medical record system:

« - to document the course of the patient1s illness and treatment

- to communicate between attending doctor and other health care professionals providing care to the patient

- for the continuing care of the patient

- for research of specific diseases and treatment

- the collection of health statistics » [10]

The MR-system at OCH does not fulfill the latter two functions.

Aim of the study

Like the the previous study we chose to divide the study into two parts, with two different aims. We wanted to map the patiens compliance in bringing the MR in acute situations, instead of ordinary admissions, and which factors influencing it. On the other hand, we wanted to identify the physicians´ perception of the current medical record system. To answer these questions we ended up with a quantitative and a qualitative strategy. Finally, we summarized the two studies and saw if the needs for urgent care affect the compliance in bringing the MR. Hopefully our work could give suggestions for possible improvements of the current medical record system at OCH, and ideas for this are discussed.

Methods

Method quantitative study

In the quantitative part of the study we wanted to see how many who actually brought the medical record when experiencing an acute situation, and further their purpose of bringing it – was it an economic aspect or because they knew that it was of relevance? Or just the fact that somebody had told them to?

To answer these questions we developed a questionnaire (see appendix 1) which all the patients arriving outside office-time were supposed to answer. Since the students of the previous study of the MR-system had made a similar questionnaire, and we knew that we were going to compare the findings, we used their questionnaire as a template. Our supervisors evaluated it and gave us guidelines on how to make it as to the point as possible, and also what we actually could expect that the ones filling in were able to understand and fill-in the information we actually were asking about.

After having designed the questionnaire, Dr. Erik Bøhler helped us finding a lady who wanted to help us fill in the questionnaires. She spoke English and understood the text in the questionnaire. We had a pilot-study before starting the real study, where the interviewer got guidance from Dr. Erik Bøhler. She did approximately 30 questionnaires in the pilot-study. After this she interviewed every patient arriving between 5 p.m. and 8.30 a.m. during the week and all day during weekends, which is assumed to be acute situations in the hospital, for two months. Totally she interviewed 281 admitted patients. Out of these, 118 (approx 42%) visited the hospital for the first time, and could not answer all the questions in the questionnaire, nor did they tell us anything about the compliance of bringing the book, therefore we excluded all of them when we did the analysis of our study. This means that the number of subjects that we analyzed in our quantitative study were 163 (58% of the total number 281). Since the number was so small, we plotted all our results in excel, and made all the calculations in the same program. Some of our results we plotted in Pearsons Chi Square[12] to have the opportunity to compare our results with the former study. In the assessment of the

[12] Chi Square calculator (4/2-14):
http://www.ling.upenn.edu/~clight/chisquared.htm

various factors that may affect the compliance, we have defined the p-value as significant <0.1

When we arrived OCH we talked to the interviewer, asking how everything had been and if she had some comments or questions. At that time we also had reviewed some of the questionnaires, and had a chance to ask her about how she had understood the questions and how she had done if there were something she were wondering about.

Method qualitative study

To supply the quantitative part where we measure the compliance of bringing the book in emergency situations, and which factors influencing this, we were interested also in how the system actually worked – not answered with numbers and percentages, but in words and with the chance to respond freely without the need to fit it into a category (the alternatives in the questionnaire). For this purpose, we chose a qualitative method with a semi-structured interview. In a consultation there are two roles – the patient and the doctor, who both are important in the use of the medical record. Skretting and Stenberg Saxe looked from the patiens point of view, therefore to supplement this we wanted to interview the doctors.

We started the work with this part before we arrived Nepal in January 2013. First of all, we studied how to make a qualitative interview and got some advices from our supervisors about that. We developed a semi-structured interview guide (see appendix 2) with mostly open-ended questions. Our thought were that they should deal about the emergency admissions only (compared to Skretting and Stenberg Saxe), but that was just if interviewee was able to distinguish between them. An emergency admission were defined to be a patient coming outside office hours, meaning weekdays between 5 p.m. and 8:30 a.m. and the whole day in weekends.

During the time we visited OCH it was just four doctors there, included our supervisor, Dr. Erik Bøhler. We chose to make this interview in the end of our stay when we had gotten to know the doctors. Because Dr. Bøhler was one of those we interviewed, we started without more guidance from Dr. Bøhler about this method. The interviews took place the last week, with one doctor each day. We were both in all the four interviews, and all the conversations were taped. We started to introduce our research and told them that the information would be

kept confidential, and deleted after we have finished the work. Back in Norway the recording were transcribed in English, and from that presented in the results in this study.

Results

Results quantitative study

Totally we have seen 281 questionnaires. Of these, 158 (56 %) were women and 123 (44%) were men. The age-distribution were 75(27%) children (< 16 years), 154 (55%) middle-aged(16-49 years) and 52 (18%) elderly (> 50 years).

As a means of transport, almost half of the population - 135 (48%) - used bus or jeep, while 48 (17 %) had walked by themselves or been carried by others. 98 (35 %) walked one part and took bus/jeep the other part. The biggest part – 155 (55%) - have traveled between 1 – 3 hours to get to the hospital. Only 21 (7 %) had less than an hour to travel, while only 9 (3 %) have traveled for more than one day. The remaining part - 95 (33%) - have traveled approximately one day.

The reason for contacting the hospital is shown in the figure below:

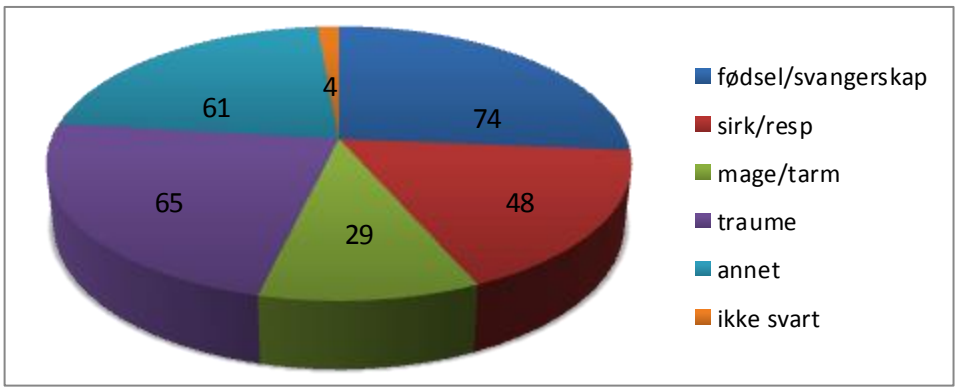


Figure 6: The reason for contacting the hospital coming outside office hour

Of all the subjects, only 17 (6 %) of the acute admissions were due to a chronic disease.

Of the total number of subjects, 163(59%) had been to OCH earlier, and for the remaining 118(41%) parts this was their first time visiting the hospital. This means that 41% of our questionnaires to not have relevant information for this study.

Further down in this section, we will only deal with the number of patients who has been to the hospital earlier as the total number, considering the calculations.

Finally in this group there were 102 who had brought the MR, while 61 who had not brought it.

	Frequence	Percentage
Brought the MR	102	63%
Did not bring the MR	61	37%
Total	163	100%

Figur 7: Overview of the main result – how many did actually bring their MR

As shown in this table most of the patients are bringing the MR – almost 2/3 – in acute situations.

Further we divided the results into two groups, depending whether or not they had brought the MR.

Question:	Answers:	*Brought the MR* * no.8	*Did not bring the MR* * no. 8
Gender * no.2	Male	33 (32%)	28 (46%)
	Female	69 (68%)	33 (54%)
Age * no.1	<16 år	23 (23%)	12 (20%)
	16 – 49 år	57 (56%)	36 (59%)
	> 50 år	22 (22%)	13 (21%)
Means of transport * no.4	Walking	6 (6%)	3 (5%)
	Carried	14 (14%)	4 (7%)
	Jeep/bus	44 (43%)	36 (59%)
	Jeep/bus and walking	38 (37%)	18 (30%)
Traveltime * no.5	< 1 hour	5 (5%)	6 (10%)
	1 – 3 hour	64 (63%)	34 (56%)
	Approx 1 day	31 (30%)	20 (33%)
	> 1 day	1 (1%)	1 (2%)
Number of previous visits * no.6	1	56 (55%)	29 (48%)
	2	18 (18%)	18 (30%)
	> 2	28 (27%)	14 (23%)
Time since last visit * no.7	< 3 months	49 (48%)	18 (30%)
	3 months - 1 year	38 (37%)	28 (46%)
	> 1 year	15 (15%)	15 (25%)
Diagnose * no.13	Pregnancy/birth	40 (39%)	15 (25%)
	Respiration/cirkulation	21 (21%)	7 (11%)
	Trauma	11 (11%)	15 (25%)
	GI-tractus	8 (8%)	9 (15%)
	other	21 (21%)	13 (21%)
	Not answered	1 (1%)	2 (3%)
Chronic disease * no.14	Yes	11 (11%)	3 (5%)
	No	88 (86%)	53 (87%)
	Dont´ know	3 (3%)	5 (9%)

* question number in questionnaire – see appenndix 1

Figure 8: Overview of results in the quantitative field-study

We asked the patients who brought the MR about their main motivation for bringing it (question no.10 in questionnaire). 11 (11%) was told to bring it at the last visit, 28 (27%)

brought it to get the consultation cheaper, 63 (62%) knew that the MR had relevant information. Nobody answered that they brought it because someone in their family told them to.

Opposite, we asked the patients who did not bring the MR about their reason (question no. 9 in questionnaire). 15 (25%) had forgotten it, 18 (30%) had lost it, and 25 (41%) did not bring it due to urgency in the acute situation. 5% did not get a MR at last visit.

Relatives of 7 % of the patients in this group brought the MR later on (question no.11 in questionnaire), while 55 (90%) did not. We asked these 55 about why they did not bring it later (question no.12 in questionnaire), and most of them (40%) had not enough time before needing to treat.

Further down we have chosen the most relevant factors we expected to influence the compliance of bringing the MR.

	Gender		TOTAL
	Male	Female	
Brought the MR YES	33	69	102
NO	28	33	61
TOTAL	61	102	163

Pearsons Chi Square: 2.99 (1 degree of freedom) p-value: 0.084

Figure 9: Gender as a factor of influence of bringing the MR

We wanted to see if the gender influenced the compliance in bringing the medical record, and it seems that the females have a better compliance, also shown in the figure below. This in contrast to age, which not seem to influence wheter or not the patient bring the MR.

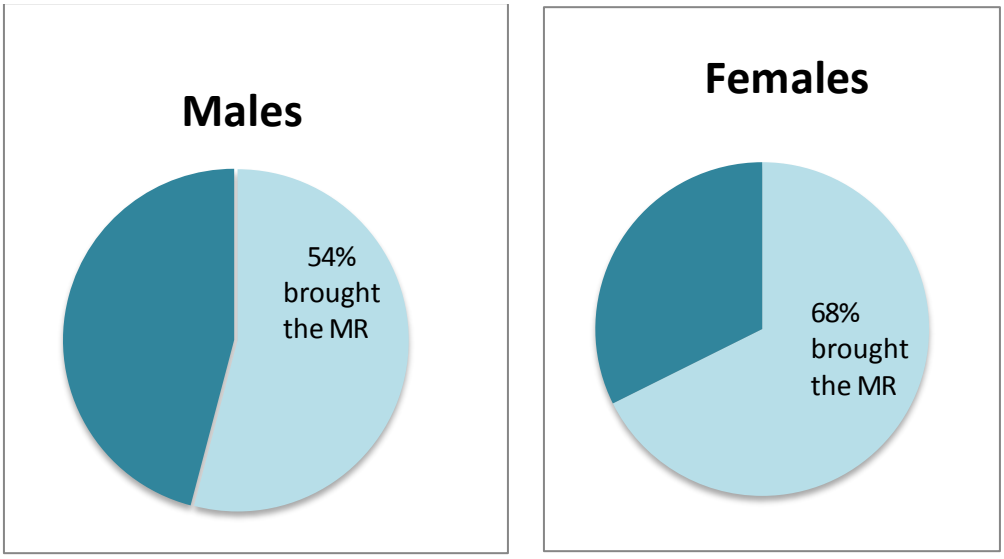


Figure 10: Females brought the book more often

		Age (years)			TOTAL
		< 16	16 - 49	≥ 50	
Brought the MR	YES	23	57	22	102
	NO	12	36	13	61
TOTAL		35	93	35	163

Pearsons Chi Square: 0.214 (2 degree of freedom) p-value: 0.899

Figure 11: Age as a factor of influence of bringing the MR

		Time since last visit		TOTAL
		< 3 months	> 3 months	
Brought the MR	YES	49	53	102
	NO	18	43	61
TOTAL		67	96	163

Pearsons Chi Square: 5.41 (1 degree of freedom) p-value: 0.02

Figure 12: Time since last visit as a factor of influence of bringing the MR

		Number of previous visits			TOTAL
		1	2	> 2	
Brought the MR	YES	56	18	28	102
	NO	29	18	14	61
TOTAL		85	36	42	163

Pearsons Chi Square: 3.13 (2 degree of freedom) p-value: 0.209

Figure 13: Number of previous visists as a factor of influence of bringing the MR

	Means of transport		TOTAL
	Walking	Bus or jeep	
Brought the MR			
YES	58	44	102
NO	25	36	61
TOTAL	83	80	163

Pearsons Chi Square: 2.85 (1 degree of freedom) p-value: 0.050

Figure 14: Means of transport as a factor of influence of bringing the MR

	Traveltime		TOTAL*
	≤ 3 hours	≥ 1 day	
Brought the MR			
YES	69	32	101
NO	40	21	61
TOTAL *	109	53	162

Pearsons Chi Square: 0.130 (1 degree of freedom) p-value: 0.718

***** 1 person did not answer

Figure 15: Traveltime as a factor of influence of bringing the MR

As shown in tables above (figure 9,11,12,13, 14, 15) we see that both ”time since last visit” and ”means of transport” do influence the patients’ compliance. Short time since last visit increase the number of patients who bring their MR. The patients who are walking, at least one part of their way to hospital, will more often bring the MR than the ones taking bus or jeep. Previous visits do not affect the patient in bringing the MR, neither do traveltime.

	Chronic disease		TOTAL*
	YES	NO	
Brought the MR			
YES	11	88	99
NO	3	53	56
TOTAL*	14	141	155

Pearsons Chi Square: 1.44 (1 degree of freedom) p-value: 0.230

* 8 persons did not answer this

Figure 16: Chronic disease as a factor of influence in bringing the MR

The chronically ill patients are more often at hospital, therefore we assumed that they would have better compliance. We cannot confirm this. In addition we looked especially at the pregnant women because they were of a great number, who also have more follow-ups. Compared to the rest of the patients they have increased probability to bring the MR.

	Pregnancy-related visit		TOTAL*
	Yes	No	
Brought the MR			
YES	40	61	102
NO	15	44	59
TOTAL *	55	105	160

Pearsons Chi Square: 3.32 (1 degree of freedom) p-value: 0.068

* 3 subjects did not answer this question – therefore only 160 in total

Figure 17: Pregnancy as a factor of influence in bringing the MR

Results qualitative part:

Compliance in bringing the medical record

One of our main issues in the interview was to find out what the doctors think about the system and how it works. The general opinion was that most people bring the book. They thougt that it was less compliance during emergency admissions compared to the compliance during office time. This may be due to stress in the acute situations, and difficulties to remember when they have panic.

We were interested in if it was some similarities in the patients who bring the book, and opposite patients who do not bring the book. Most of the doctors agreed that they with several visits, especially the chronically ill, and well educated people more often bring the book. The reasons for bringing the book, according the doctor´s perception, were first of all to get the consultation cheaper, and that the hospital´s staff would be more happy. Some mentioned that the patients had an understanding about the helpfulness, and that they would like another treatment in cases were the first one did not help, and therefore brought the book to refer too.

The doctors thought that poor, non-educated, and alcoholics are overrepresented in to not bring the book. Otherwise, people who live far away and with long journey before they get to the hospital, more often forget the book. And as already mentioned; the emergency patients, more often do not bring the book.

Content and sensitive information

It exists a general opinion in what the medical record should content, the medical coordinator inform about this for all new doctors, otherwise it is a subjective assessment; they write down all positive findings and vital information. It is not time and space for complementary information. They sometimes avoid writing down things of relevance, especially pregnancy outside marriage, diagnoses like HIV and hepatitis, but someone told that they never avoid this information. It emerged that the patients never asked for this, but that it was an assessment for the doctor in each case.

The medical record is filled out at admissions to the hospital, and at discharge. Results from supplementary examinations and any changes in the treatment, are filled out during the stay. At discharge the patiens should get to know that they have to bring the book to next visit. The doctors did not think that this happened every times, but in all the cases which require follow-up. For example the pregnant women who are there for controls, get this knowledge. In situations where someone forgets the book, they get a strict reminder to bring it next time. The doctors feel situation like this quite frustrating, and expresses this frequently above the patients (see below).

Consequences of not bringing/bringing the book in acute situations

All the doctors stated that the medical record was of relevance in most of the cases, even though not all. If a patient brought a book, all of them said that they always reviewed the book after some initial questioning.

Values of bringing the book:

The acute situations where the medical record was of most value all the doctors agreed that is was in exacerbations of well-known chronic diseases. An example several of the doctors mentioned is COPD-patients. Their exacerbations are similar to symptoms of tuberculosis, and therefore they often take a sputum-test to rule out tuberculosis. If the patient bring their MR and it is registrated in the record that a sputum-test was taken within the last six months they can exclude tuberculosis. If the patient had not brought the medical record in the very same situation, they would have had to check for tuberculosis once more.

Consequences of not bringing the book:

All the doctors mentioned that one important consequence was that they had to start all the investigations from scratch, because most of the patients did not remember what kind of previous disease/history, treatment and medication they had had. Many of the doctors said that they feel some kind of frustration, depending on the diagnosis, when patients do not bring the medical record because it often give them more unnecessary work and a delay of the

treatment. Most often they tell the patient how they feel to make them understand the importance of bringing the medical record.

Actions when not bringing the book:

All the doctors stated the importance of always to interview the patient in the acute situation first, wheter or not they had brought the book. Whereas they all said that if the patient had not brought the book, they had to ask more specific both patients and their relatives (if the patient was to ill) to get the information they needed. Further on they all stated the importance of always to do a solid clinical examination. If the patient did not live too far away, and the medical record would have been of help, they usually asked relatives to bring the medical record the next day. In special occasions they had asked for a fax from other hospitals where the patient had had some treatment. For example a pregnant women who came to deliver and had a scar on her stomach, were they had gotten a fax from the hospital in Katmandu where they had operated her with all the information about the previous operation. Then they knew whether or not the woman could deliver vaginally or by caesarean section.

Benefits and drawbacks with the current system.

The doctors agreed in that today medical record system at OCH works. But to dive deeper in this questions, we would like to know about adventages and disadventages with the practise of this system. It emerged that compared to Norwegian standard this system is old-fashioned, but having in mind that this is rural Nepal and the limitied finances, it generally works very well.

Just that this system is so cheap is highlighted as a benefit. And probably the most cost-effective single measure. You do not need space for archiving and manpower to operate it. The medical record is a simple book brought by the patients, where you just write down the most important, thus you will save time when you are not looking in the archive and very fast can read through the previous history. This simplicity makes the system efficient. Another thing they emphasized, is that the patient is responsible for his journal, and if they lose it, they can only blame themselves. Morally they own their medical record, and nobody else can read it without the patient is admitted. Advantages for the patients of the design were that it was small and neat and cheap to buy.

Opposite, various disadvantages were mentioned. They may forget or lose it, which is the main question for this research. This missing information can lead to problems in assessment and treatment, especially with chronic illness. The MR also lacks details, and sometimes it may be relevant. The text is handwritten and it may be difficult to interpret. To get a new medical record is comparatively cheap for the patients, and they therefor leave it home. In the way this system is used, the doctor can be biased in the face of patients, because he has seen the previous history so early in the consultation. Another obvious point is that this system does not make it possible to do research and make statistics, which was highlighted as a significant weakness.

Suggestions of how to improve the system:

It was some different meanings of whether or not the system was sufficient. About half of the doctors said that the system worked for this special hospital and its situation, whereas all saw both pros and cons with the MR-system (see further up). All of the doctors mentioned the possibility of an electronic journal system, but all of them also thought that it would not be possible in at least 15 years, due to electricity, manpower and knowledge. They all saw the importance of making the adjustments one step at a time, even though some of them thought that with the growing mass of patient, the need for a change was bigger now than before.

One suggestion was to make a hospitalized system, like he had experienced in a bigger hospital in Nepal. This was an archive with all the written journals, organized after file-numbers. The patients would have to have a small card with the file number, and bring this to the hospital each time. All the information about a patient would then be kept in hospital, and the staff in the hospital would always have access to relevant information about a patient coming to the hospital. Also, by having all the MRs in hospital it would have been easier to take statistics and do research. This system would have required and extra room and an extra employee.

There were several suggestions of simple improvements. For example, one of the doctors we interviewed mentioned that he missed a little extra space to write, so therefore one simple adjustment which he meant would be useful would have been to make the record-book bigger, with more space to write down details. And further on, he also suggested making it more solid, in a way that it would not be destroyed that easily.

Another suggestion was to take a copy (photo or scanning) of the record after each visit and then store the copy in a computer.

At last, some mentioned to make a bigger difference in price between bringing vs not bringing the medical record when coming to OCH. They meant that if the price-difference were to small many would not think of bringing the book as important. Yet, the same doctors mentioned the importance of not making the price for first visit too expensive – then the patients might not come to the hospital at all.

Discussion

Discussion of method

Discussion of quantitative method:

Because this topic is investigated before, we had to deal with the former study. It has been to great help, but also difficulties because it is one big difference here. The former study investigated patients admitted to hospital through the outpatient clinic (during office time). We have opposite seen the patients admitted between 5 pm and 8.30 am. Because of this we got only 281 schemes (compared to Skretting and Stenberg Saxe´s study where more than 5900 patients were interviewed). Because of the very small material, it is doubtful significant results. It was no point to analyze the numbers in SPSS, and at least it makes it difficult to compare the two studies. However, it is good basis to answer our main question: How many bring the medical record in acute situations?

Probably it is also a weakness that these two studies are made at different times. It is just 3 years between, but OCH is under constant development, especially the infrastructure, in terms of roads, has been much better the last years. Most patients traveled with bus and car (48%), according the questionnaire.

Preparation of a good questionnaire was challenging, because we had little insight in the cultural setting in rural Nepal and the setting in OCH. Our supervisors were to great help in this process, and we did a pilot study before the real study started. However, we cannot exclude that some of the questions were misunderstood. The lady who filled in the questionnaires had no medical expertise, and it did some of the answers uncertain. For example, question 14 and 15; ¨Is this diagnosis an exacerbation of a chronic disease?¨and

¨What kind of treatment did the patient get?¨. Dr. Erik Bøhler cooperated with her to fill in these answers.

For the presentation of the results, we have created categories after receiving all forms. For instance, in the scheme we got the exact age in years, but we put them into categories; below 16, between 16 and 49, and above 50. We define this quit casually, but if we had created other categories, the results could have been different.

Another problem with our method/study is that it lasted for a very short time, only approximately 2 months. Even though we prolonged it for some more weeks when we got to the hospital and saw how few questionnaires we had. Also, our study went on only one period of one season, which were the dry-season were the people had to climb to the top of the trees to find food for the animals. With this taken in consideration we could assume that many of the ones coming to hospital due to trauma did not bring their MR due to urgency, or simply because this was their first time. If we would have done the study in another season as well we might have found other numbers of the reason for not bringing it, or even maybe we would have had a lower percentage of people coming to the hospital for the first time.

Discussion of qualitative method:

Since our study is to find out how to medical record-system works in acute situations, we felt like we needed to ask the ones using it – namely the doctors. A qualitative interview seemed appropriate, which also our supervisors told us. This way we could interpret their experiences with the findings in our quantitative study.

We made an interview-guide before going to Nepal, without knowing anything about the circumstances there. We got help from Dr. Erik Bøhler, and he advised us to wait with the interviews until the end, and so we did. That was of good help, because we then we were familiar with how the medical record system worked, and also we knew better the differences in culture and could therefore take that to consideration when doing the interviews. We did all the interviews the last week, after staying at OCH for approximately three weeks.

In our interview-guide we had a lot of questions, and one point is that possibly we had too many to call it a qualitative interview, but after some counselling with our supervisors we found that it was okay, and a good way to use as background for our interpretation of the quantitative part.

The interviews were done in different places, depending on where the doctors felt it more convenient. We taped the interview, and after arriving back in Norway we wrote the interviews down. It was some difficulties in hearing everything, and also we did the writing down after some time, which may have made us forget the situation and therefore the interpretation of what they actually said.

There were only four doctors working at OCH at the time we were there, and that gave us only four interviews. That is quite few, but on the other hand they gave us some material and were better than nothing. Also, two of the doctors had only been working at the hospital for approximately six months, and did not have that long experience and insight in the MR-system. On the other hand they had recently experience from another hospital, and had therefore good basis to compare this system with another MR-system.

We interviewed the doctors in English, which is the language of use in medicine in Nepal, so we assumed this was okay. And so it was, but also we felt that it sometimes was a handicap for both us and especially them who were supposed to talk freely about their thoughts and opinions. Sometimes they had some difficulties in finding the words, and were therefore a little bit bound of that. Because of doing it in English there were also some misunderstandings of the questions, and also we might have misunderstood the answers.

Another thing we noticed is that loyalty and respect is important in the Nepali culture. We tried our best to explain that the answers were confidential and anonymous, but either way the

chance of answering ”the way it was expected” due to the hospital might have influenced their answers.

In a qualitative interview the subject is supposed to be open-ended and share all of their thoughts. As we discussed earlier, we might have had too many questions, but also what we experienced was that sometimes we actually needed all that questions to make them talk. Their answers were often short and very specific instead of sharing thoughts and feelings. This made it difficult to ”follow the thoughts of the subject” and have a real qualitative interview.

Discussion of results

Discussion of quantitative results

We started to look at 281 completed questionnaires. Only 163 (59%) had been to OCH earlier. When we study the compliance in bringing the MR, it is obvious that the patient must have gotten the MR before he comes. For this reason, we have omitted the first-time visitors (118), and have totally 163 schemes to deal with. This number is quite small, at least compared to Skretting and Stenberg Saxe´s study which had 2045.

Nevertheless, it is large enough to determine that the compliance is different in acute situations, compared to the compliance during office time. In our study 102 brought the MR, of totally 163, equivalent to 63%. In the former study 1834 brought the MR, of totally 2045, equivalent to 89,7%. The two studies differ 26,7 %, which means that the probability of bringing the MR decrease that much if the admission is acute and not during office time.

In the assessment of the various factors that may affect the compliance, we have defined the p-value as significant <0.1. With a smaller p-value, our material is generally insufficient.

We found different factors influencing the patients’ compliance of bringing their MR to hospital. For instance, we found that women had a greater compliance than men (68% vs 54%), but the females were more often admitted than the males (102 vs 61, respectively).

Another thing we saw very quickly was that pregnant women were of a great majority compared to everyone else. This observation might be due to that the government gives money to the pregnant women if they go to hospital for check-ups and delivery (we were told by the doctors there about this). Therefore, when doing the calculations we put all the pregnant women in one group and everyone else in the other group. In this calculation (see figure 17) we found that pregnant women have a much higher compliance than everyone else (72,7 % vs 58,1 %). Also, in this group we have removed all the non-pregnant women, which make us think that our statement that all women have higher compliance might not be right. Maybe we can draw a conclusion instead that it is the pregnant women who have higher compliance, and not all women.

Time since last visit stands out as a factor of importance (see figure 12). 73% of the patients that had been to the hospital within last 3 months, brought the book, compared to 55% that had last time visited the hospital for more than 3 months ago. The former study showed that 95,8% of patients with a last visit within last 3 months, brought the MR, but again this is admissions during office time. Short time since last visit remains as a beneficial factor for the compliance, naturally when our memory weakens with time. A source of error in our calculation is that we did not make the categories (below and above 3 months) in the questionnaire, but later when we were working with the results. Question 7 in the questionnaire (see appendix 1) was asked open, not with alternatives.

We also expected that how many times they had been to OCH before, should influence the probability of bringing the MR. As shown in figure 13 this is not proven. The former study found this factor significant, with a better compliance the more times the patient had visited the hospital.

Let us consider the way the patient travel to the hospital. We asked open about this in the questionnaire (see appendix 1, question no. 4) and got a lot of different answers; for instance ¨walking¨, ¨carrying with cockro¨, (which is a basket), and even a lot answers was like; ¨half

by walking and half by motor bike¨, or ¨one hour by carrying and then by jeep¨. To get a sufficient number we put this into two categories; ¨walking¨ which includes all patients who walked/were carried at least one part, and the patients who traveled with bus/jeep the whole way. This leads to a significant better compliance in the group which walked. It is difficult to speculate in the reason for this, and probably will the way we divided the groups express a bias.

The former study found that travel time significant influencing the compliance. We could not confirm this finding. Also here we have categorized the responses differently in the questionnaire and in the calculation. The alternatives in the questionnaire (see appendix 1, question no. 5), do not include something between 3 hours and 1 day. We suggest that this gave a poorly differentiated picture, when it was random if they chose the one or the other (b or c), even if they actually were somewhere in between.

We thought that we would find a difference in the acute admissions which were due to a chronic or recurrent disease and the rest, because they are more often at hospital and therefore more often bring their MR. But we did not find this factor as significant, and therefore we cannot say anything about this. One problem of concern is that the number of acute admissions due to chronic disease is very small, which may be caused by difficulties in understanding this question in the questionnaire.

We found some differences in the motivation for bringing the MR – the main reason were because they knew that the MR had relevant content (62%), followed by the ones who brought it to get the consultation cheaper (27%). This is in contrast to the former study, were Skretting and Steenberg Saxe found the opposite, the main reason for bringing the MR was to get the consultation cheaper. This difference might be due to better information from the staff at the hospital over the last three years, and the fact that they actually tell and show frustration when not bringing it (as said in the qualitative part). The former study actually pointed this as a suggestion of how to improve the system – ”improving the routines of informing the patients in a proper way, OCH may increase the patients’ compliance”[11].

Concerning the ones not bringing the MR, the main reason not bringing it in were because of urgency in the acute situation (41%). The former study did not have this as an option, obviously, since they excluded all the acute admissions. Disregarding this and looking further at the possibilities in our study, 30% did not have it because they had lost it and 25% had forgotten it. Compared to the former study, who found the same, where the major part (47.1%) did not bring the MR because they had forgotten it.

The numbers concerning motivation for bringing or reason for not bringing the MR are not calculated in a chi square, therefore we cannot draw these conclusions as significant.

Discussion of qualitative results:

With the weaknesses already discussed about method in mind, it is some things which are eye-catching from the interview with the four doctors. Patients generally bring the book, they stated. And this is in accordance to what we found in the quantitative part. Further, the doctors thought that emergency patients in some more degree forget the MR. Compared to Skretting and Stenberg Saxe, this is totally right. The doctors mentioned stress in the acute situation as a cause for not bringing the book, and in the quantitative part we saw that 41% left it due to urgency of the disease. In addition 25% had forgotten it, maybe this should be included here also. Because they did not see all the alternatives in the question, or that it was some misunderstanding in what we meant about forgetting.

The doctors thought that chronic ill patients and patients more often bring the book. This because these patients require follow-up and more often get the knowledge about the journals' importance. Compared to a patient with a single trauma it is obvious that the medical record is of more value for the chronic ill. For monitoring of medications, change treatment etc., for not having to do the assessment again etc. (79% of chronic ill patients brought the book compared to 62% non-chronic-ill, but these values are not significant.)

The doctors also suggested that patients with many previous visits had a better compliance. And also that educated patients did it more often. Regarding patients with many visits, our quantitative part does not support this suggestion. Regarding to the value of education, we did

not sample this information in the questionnaire.

In all the interviews, the doctors mentioned that one reason for patient bringing the MR was because they got the consultation/hospital-stay cheaper. Actually all of the doctors saw this as an important cause. After reviewing all the questionnaires, we found that 27 % brought the book because they knew that they got a cheaper stay when doing that. Many of the doctors also stated that ”pleasing” was another reason for the patient to bring the book – they thought or knew that the doctors and hospital staff were more happy if they brought their medical record.

When comparing the patient not bringing the book, and trying to generalize some similarities between these patients, all the doctors stated that they thought that many of these lived far away from the hospital. In the quantitative part with did not find this as a significant factor.

A similarity between those not bringing the book, which the doctors stated, was that they often were poor and uneducated, and did not understand the importance of bringing the book.

All the doctors said that the MR was of great value in acute situations as well as during office time. Therefore most of the doctors said that they almost always asked a relative to get the book if they had not brought the book from the beginning. We asked the very same question in our quantitative questionnaire, and found in contrast that only 7 per cent of those not bringing the medical record actually did so. It might be due to that the doctors actually do not ask the relatives to bring the book later as often as the doctors think they do. Another cause is that there was no time for getting the book in the acute situations before needing to treat. In our questionnaire we found that in 40 % that was the reason. Also at the time where our study went on, many of the acute admissions were fractures and traumas because of dryness and people needed to climb in threes to get leaves for the animals. This was stated by the doctors based upon their experiences. And with that kind of admissions the medical record was of less value and therefore not that many went for it. We might have found another number or

percentage of those actually bringing the medical record later on if we had done the study in another season, or over a longer period of time.

Conclusion

Compared to medical record systems we are used to in the western world, it is several concerns and differences with a system based on the patients compliance in bringing the MR. It is expected that the patients who have been to OCH before, are bringing their MR to each consultation. Nepali people living under very simple circumstances, and the fact that they should save important information at home, were quite unthinkable for us.

Considering the resources they have available today, it surprised us how well the information was taken care of. Our finding is that 63% of previous visitors brought their MR to acute admissions. The probability of bringing the MR decrease if the admission is acute and not during office time compared to those during office time. This is about as expected, when these admissions is characterized by urgency, fear and rush. Perhaps we should be happy with a lower compliance in acute situations, since many admissions (e.g. traumas) are easily treated without the MR. We found several factors that increased their compliance in bringing the book: short time since last visit, walking as the mean of transport and being a pregnant woman.

The main reason for bringing the MR in our study was because they knew it had relevant content, and not as the former study where they found that the patients brought it to get the consultation cheaper. Skretting and Stenberg Saxe suggested that they should focus on changing the motivation for bringing the MR, so maybe they managed it! Therefore we challenge OCH to continue to clarify the MR´s importance, and to do it regularly.

The doctors have a good picture of how the system works, and they know a lot about when it sometimes fails. This is a good starting point to improve the system. All the doctors mentioned that a cheaper consultation was a way to motivate the patient to bring the MR. We found that for more people understanding the importance were of greater value.

There are both drawbacks and benefits with the current system, and it is obvious that the biggest drawback is that the doctors sometimes have to work without the MR, which is the main question for this research. It happens in 37% of the acute cases. Also the system does not make it possible to do research and make statistics on the hospitals admissions. On the other hand, the system is very cheap and requires few resources. The patient's own their personal information and must take care of it themselves.

We think the MR system at OCH is a feasible solution with the facilities they have on disposal. Still there is not good enough power-supply or resources for choosing an electronical medical record system. The aim will be to continue to improve the current system and continue to state the importance of bringing the MR to the patients.

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Appendices

Appendix 1 : Questionnaire

The medical record system in acute situations

This questionnaire should only be answered based on consultations between 5 p.m. and 8:30 a.m. during week, and the whole day during off days.

No:

Date:

Time:

Personal identification:

1. **Age:**

2. **Gender:**

3. **Name:**
   (evt: Initials to the patients first name and surname:)

To get to the hospital:

4. **How did the patient travel to the hospital?**
   _____
   _____
   _____

5. **How far did the patient travel to get to the hospital?**
   a. Less than 1 hour
   b. Between 1-3 hours
   c. Approxemately 1 day
   d. More than 1 day

6. **How many times has the patient visited the hospital?**
   a. First time

b. 1
c. 2
d. 3 or more

7. **How long time since the last consultation? _____**

8. **Did the patient bring the book?**

a. Yes
b. No

9. **If "No" is answered on question 8, what was the reason for not bringing it?**
   a. Forgot the medical record
   b. Lost the medical record
   c. Did not have time to look for the book due to urgency of disease
   d. Did not get a medical record at the previous visit
   e. Other reason:

      _____

10. **If "Yes" is answered on question 8, which of these statements are true, concerning the main reason for bringing the medical record to the hospital?**

    Please read the statements for the patient, and make him/her choose just one of the following alternatves:

    a. Because somebody at the hospital told me to do so
    b. Because I get the consultation cheaper if I bring it
    c. Because I know that the book contains important information for the hospital
    d. Because somebody among my family/friends told me to bring the book
    e. Other reason:

       _____

       __

11. **If the patient didn´t bring the book, did someone bring the book to the hospital later?**

a. Yes
b. No
c. When:

_____

_____

12. If nobody brought the book to the hospital later, what was the reason for that?

a. Too far
b. No need for it for treating this situation
c. Not enough time before needing to treat
d. This was the patient´s first visit to the hospital
e. Another reason

13. Tentative diagnosis: _____

14. Is this diagnose an exacerbation of a chronic disease?

a. Yes
b. No
c. Don ´t know

What kind of treatment did the patient get?

_____

_____

_____

_____

_____

Appendix 2: Guide qualitative interview

Guide qualitative interview

- general:
    - what is your background of being a doctor?
- Consultation:
    - How do you use the ticket?
    - What is the difference of treating a pasient that brings the ticket, compared with one that doesn´t?
    - Whats your general opinion of the complience of bringing the book?
    - Do you se any simularities between the pasients not bringing the book?
- The ticket
    - When do you write in it normally?
    - What do you write down?
    - Is there any general opinions of whats of importance to write down?
    - Is there any circumstances that the patient doesn´t want you to write down information? Do you ever skip writing important information in the ticket?
    - Pro´s and con´s with the ticket system?
    - Do you have any suggestion of how to improve this system?
    - Can you think of a situation where the book was of relevance? In what way?
    - Can you think of a situation where the book was of no use?